इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 6376 (1986): Pattern lifting pins and hooks for use in foundries [MTD 14: Foundry]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA
JURIS
NON EXCUSAT

PROTECTED BY COPYRIGHT

IS : 6376 - 1986
(Reaffirmed 2003)

Indian Standard

SPECIFICATION FOR PATTERN LIFTING PINS AND HOOKS FOR USE IN FOUNDRIES

(*First Revision*)

UDC 621·744·077

© *Copyright* 1986

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

November 1986

Indian Standard

SPECIFICATION FOR PATTERN LIFTING PINS AND HOOKS FOR USE IN FOUNDRIES

(First Revision)

Foundry Sectional Committee, SMDC 17

Chairman	*Representing*
Dr S. S. Khanna	National Institute of Foundry & Forge Technology, Ranchi
Members	
Shri M. M. C. Agarwal	Heavy Engineering Corporation Ltd, Ranchi
Shri A. K. Banerjee (*Alternate*)	
Shri S. Chaubey	Steel Authority of India Ltd (Rourkela Steel Plant), Rourkela
Shri U. Mishra (*Alternate*)	
Shri K. L. Chaudhary	Tata Engineering & Locomotive Co Ltd, Jamshedpur
Shri A. Bhattacharjee (*Alternate*)	
Shri S. H. Commissariat	The Institute of Indian Foundrymen, Calcutta
Shri R. P. Varshney (*Alternate*)	
Shri K. A. Gandhi	HMT Ltd, Bangalore
Shri H. S. Ramachandra (*Alternate* I)	
Shri A. Shantharam (*Alternate* II)	
Shri P. P. Chopra (*Alternate* III)	
Shri R. M. Gorane	Kirloskar Brothers, Kirloskarvadi
Shri D. M. Dabak (*Alternate*)	
Shri H. N. Singh	Indian Iron & Steel Co Ltd, Calcutta
Shri R. N. Mukherjee (*Alternate*)	
Shri P. L. Jain	National Institute of Foundry & Forge Technology, Ranchi
Shri K. Kishore (*Alternate*)	
Shri L. M. Joshi	Delhi Cloth & General Mills Co Ltd, Delhi
Shri S. S. Khosla	Directorate General of Technical Development, New Delhi
Shri S. V. Bopardikar (*Alternate*)	

(*Continued on page* 2)

© *Copyright* 1986

INDIAN STANDARDS INSTITUTION

This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

(*Continued from page* 1)

Members	*Representing*
Dr R. Lalith Kumar	Indian Institute of Technology, Kharagpur
Shri Y. C. Mishra	Cooper Engineering Ltd, Satara
Shri A. K. Banerjee (*Alternate*)	
Shri M. L. Navare	Versatile Equipments Private Ltd, Kolhapur
Shri Subhash Kulkarni (*Alternate*)	
Dr G. N. Rao	National Metallurgical Laboratory (CSIR), Jamshedpur
Representative	M. M. Suri & Associates (P) Ltd, New Delhi
Shri N. R. Nagaraj Rao	Steel Authority of India Ltd (Bhilai Steel Plant), Bhilai
Shri R. R. Saran (*Alternate*)	
Shri T. S. Venkoba Rao	Ennore Foundries Ltd, Madras
Shri M. P. Ponnuswamy (*Alternate*)	
Shri R. N. Saha	Directorate General of Supplies & Disposals, New Delhi
Shri Darbara Singh (*Alternate*)	
Prof K. S. Sreenivasa Murthy	Indian Institute of Science, Bangalore
Prof S. Seshan (*Alternate*)	
Senior Chemist & Metallurgist, CLW, Chittaranjan	Ministry of Railways
Chemist & Metallurgist, (SF), CLW, Chittaranjan (*Alternate* I)	
Chemist & Metallurgist, NF Rly, New Bongaigaon (*Alternate* II)	
Shri V. N. Sunderrajan	M. N. Dastur & Co Ltd, Calcutta
Shri S. Thiyagarajan	Sourthern Alloy Foundries Pvt Ltd, Madras
Shri A. Thangavelu (*Alternate*)	
Shri Thomas Paul	Pioneer Equipment Co Pvt Ltd, Vadodara
Shri C. Bhaskaran (*Alternate*)	
Shri V. N. Upadhayaya	Federation of Engineering Industries of India, New Delhi
Shri H. L. Bhardwaj (*Alternate*)	
Shri Nand Lal Varma	International Steel Fabricators, Bombay
Shri Rajesh Kumar Varma (*Alternate*)	
Shri K. Raghavendran, Director (Struc & Met)	Director General, ISI (*Ex-officio Member*)

Secretaries

Shri A. B. Tewari
Deputy Director (Metals), ISI
Shri S. K. Panja
Assistant Director (Metals), ISI

Foundry Ancillary Equipment Subcommittee, SMDC 17 : 2

Convener	
Shri P. L. Jain	National Institute of Foundry & Forge Technology, Ranchi

Members	
Shri J. N. Bhakta	Development Commissioner (Small Scale Industries), New Delhi
Shri D. M. Biradar	The Institute of Indian Foundrymen, Calcutta

(*Continued on page* 7)

Indian Standard

SPECIFICATION FOR PATTERN LIFTING PINS AND HOOKS FOR USE IN FOUNDRIES

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 27 January 1986, after the draft finalized by the Foundry Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard was first published in 1971. While reviewing this standard in the light of the experience gained during these years, the Sectional Committee decided to revise it. In this revision, the material requirement has been modified and a packing clause has been incorporated.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements for pattern lifting pins and hooks.

2. SUPPLY OF MATERIAL

2.1 General requirements relating to the supply of lifting pins and hooks shall be as laid down in IS : 1918-1966†.

---

*Rules for rounding off numerical values (*revised*).

†Methods of physical tests for foundry sands.

3. DIMENSIONS ON TOLERANCES

3.1 Shape and sizes of lifting pins and hooks shall be as given in Table 1.

3.2 Tolerances on the dimensions of lifting pins and hooks as specified in Table 1 shall meet the requirements of 'coarse class' of IS : 2102 (Part 1)-1980*.

4. DESIGNATION

4.1 Lifting pin and hook shall be designated by their length l_1, for example, a lifting pin of length $l_1 = 180$ mm and a hook of length $l_1 = 180$ mm shall be designated as follows:

Lifting pin 180 IS : 6376

Hook 180 IS : 6376

5. APPLICATION

5.1 Pattern lifting pins fit into pattern lifting and rapping plates specified in IS : 6378-1971† and are used for lifting out patterns by hand or machine. The pin shall be turned 90° to be engaged in the plate. Lifting hooks are screwed into the rapping plates and used for lifting out patterns by hand or machine.

6. PACKING

6.1 Each lifting pin or hook shall be suitably coated with a thin film of rust preventive oil.

6.2 Lifting pins of same size and hooks of same size shall be packed in wooden boxes weighing not more than 50 kg overall.

7. MARKING

7.1 Each pin or hook shall be marked clearly with the manufacturer's name or trade-mark and the designation of the tool.

7.1.1 Each box shall also be marked with the information given under **7.1**.

---

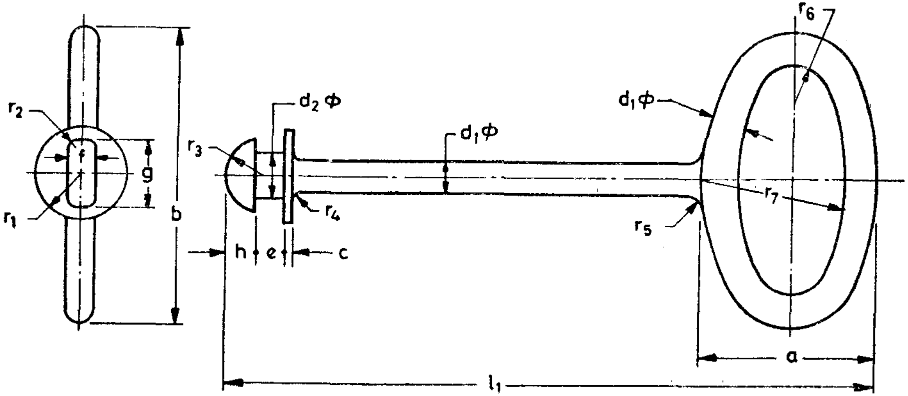
*General tolerances for dimensions and form and position: Part 1 General tolerances for linear and angular dimensions (*second revision*).

†Specification for pattern lifting and rapping plates.

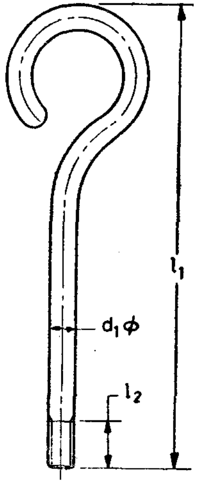
TABLE 1 SHAPE AND DIMENSIONS OF LIFTING PINS AND HOOKS

(*Clauses* 3.1 *and* 3.2)

All dimensions in millimetres.



LIFTING PIN FOR FITTING INTO THE RAPPING PLATE



LIFTING HOOK FOR SCREWING INTO THE RAPPING PLATE

l_1	a	b	c	d_1	d_2	e	f	g	h	r_1	r_2	r_3	r_4	r_5	r_6	r_7	l_2
180	50	80	2	9	12	8	8	18	8	12·5	2	10	2	4	10	50	25
250	70	100	4	14	16	12	12	25	14	16	4	16	4	6	16	70	25

7.2 It may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

(*Continued from page* 2)

Members	*Representing*
Shri T. K. Chanda	Tata Engineering & Locomotive Co Ltd, Jamshedpur
Shri I. S. Sagu (*Alternate*)	
Shri D. K. Dutta	Ordnance Factory (Ministry of Defence), Muradnagar
Shri O. P. Khurana (*Alternate*)	
Shri G. G. Londhe	Premier Automobile Ltd, Bombay
Shri M. L. Navare	Versatile Equipments Pvt Ltd, Kolhapur
Shri Subhash Kulkarni (*Alternate*)	
Shri S. P. Natarajan	Ennore Foundries Ltd, Madras
Shri V. S. Kandaswamy (*Alternate*)	
Shri P. K. Panda	National Institute of Foundry & Forge Technology, Ranchi
Shri D. Panduramgam	Setty Associates Pvt Ltd, Madras
Shri P. Rajehekaran (*Alternate*)	
Shri Thomas Paul	Pioneer Equipment Co Pvt Ltd, Vadodara
Shri C. Bhaskaran (*Alternate*)	

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

INDIAN STANDARDS INSTITUTION

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 331 01 31, 331 13 75 — **Telegrams: Manaksanstha**
(Common to all Offices)

Regional Offices:	*Telephone*
*Western : Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	6 32 92 95
†Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola, CALCUTTA 700054	36 24 99
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	2 18 43 3 16 41
Southern : C.I.T. Campus, MADRAS 600113	41 24 42 41 25 19 41 29 16

Branch Offices:	
'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMADABAD 380001	2 63 48 2 63 49
'F' Block, Unity Bldg, Narasimharaja Square, BANGALORE 560002	22 48 05
Gangotri Complex, 5th Floor, Bhadbhada Road, T. T. Nagar, BHOPAL 462003	6 67 16
Plot No. 82/83, Lewis Road, BHUBANESHWAR 751002	5 36 27
53/5, Ward No. 29, R. G. Barua Road, 5th Byelane, GUWAHATI 781003	—
5-8-56C L. N. Gupta Marg (Nampally Station Road), HYDERABAD 500001	23 10 83
R14 Yudhister Marg, C Scheme, JAIPUR 302005	6 34 71 6 98 32
117/418 B Sarvodaya Nagar, KANPUR 208005	21 68 76 21 82 92
Patliputra Industrial Estate, PATNA 800013	6 23 05
Hantex Bldg (2nd Floor), Rly Station Road, TRIVANDRUM 695001	7 66 37

Inspection Offices (With Sale Point):	
Pushpanjali 205-A West High Court Road, Bharampeth Extension, NAGPUR 440010	2 51 71
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	5 24 35

---

*Sales Office in Bombay is at Novelty Chambers, Grant Road, Bombay 400007 — 89 65 28

†Sales Office in Calcutta is at 5 Chowringhee Approach, P. O. Princep Street, Calcutta 700072 — 27 68 00

Printed at Arcee Press, New Delhi, India